

U.S. Serial No. 10/666,356

Reply to Office Action of: September 19, 2006

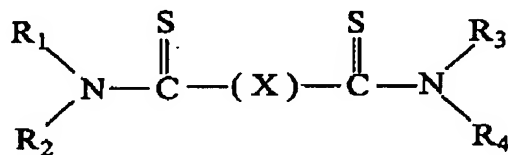
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Page **RECEIVED**  
CENTRAL FAX CENTER**OCT 03 2006**AMENDMENTS TO THE CLAIMS

1. (Currently amended) A lubricating oil composition having extended life as evidenced by reduction in viscosity increase, oxidation and nitration when used in gas engine comprising:

- (a) a major amount of a base oil of lubricating viscosity;
- (b) a combination of neutral and overbased metallic detergents in an amount sufficient to provide a sulphated ash in the range of about 0.2 wt% to about 2.0 wt%;
- (c) based on the volume of the composition from about 0.06 vol% to 0.15 vol% of a zinc dialkyldithiophosphate and about 0.1 vol% to 2.0 vol% of a zinc dialkyldithiocarbamate; and
- (d) from about 0.5 vol% to about 2.0 vol% of an ashless dihydrocarbylthiocarbamoyl antioxidant, ~~or from about 0.5 vol% to about 1.9 vol% of phenolic antioxidants, or from about 0.5 vol% to 3.0 vol% of mixtures thereof.~~

2. (Original) The composition of claim 1 wherein the dihydrocarbylthiocarbamoyl antioxidant is represented by the formula



where R<sub>1</sub>, R<sub>2</sub>, R<sub>3</sub> and R<sub>4</sub> are the same or different and each represents an alkyl group of 3 to 30 carbon atoms, X represents S, S-S, S-(CH<sub>2</sub>)<sub>y</sub>S, S-CH<sub>2</sub>CH<sub>2</sub>(CH<sub>3</sub>)-S and y is an integer of 1 to 3.

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3. (Previously amended) The composition of claim 1 or 2 having a phosphorus content of up to 0.008 wt%.

4. (Original) The composition of claim 3 wherein the base oil has a viscosity at 100°C of between about 5 to about 16 cSt.

5. (Previously amended) The composition of claim 4 including one or more gas engine oil additives selected from the group consisting of ashless dispersants, ashless antiwear additives, metal passivators, pour point depressants, Viscosity Index improvers and antifoamants.

6. (Currently amended) A method for enhancing the life of a lubricating oil composition as evidenced by a reduction in viscosity increase, oxidation and nitration when used in a stationary gas engine by adding to the oil a minor amount of additives comprising

- (a) a combination of neutral and overbased metallic detergents in an amount sufficient to provide a sulphated ash in the range of about 0.2 wt% to about 2.0 wt% based on the total weight of the composition;
- (b) based on the volume of the composition, from about 0.06 vol% to 0.15 vol% of a zinc dialkyldithio phosphate and about 0.1 vol% to 2.0 vol% of a zinc dialkyldithiocarbamate; and
- (c) based on the volume of the composition, from about 0.5 vol% to about 2.0 vol% of an ashless dihydrocarbylthiocarbamoyl antioxidant, ~~or from about 0.5 vol% to about 1.9 vol% of phenolic antioxidants, or from about 0.5 vol% to 3.0 vol% of mixtures thereof.~~

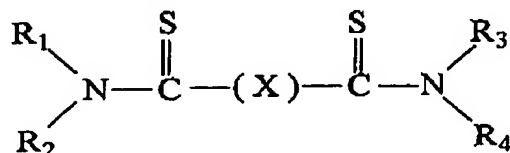
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7. (Original) The method of claim 6 wherein the dihydrocarbylthiocarbamoyl antioxidant is represented by the formula



where  $\text{R}_1$ ,  $\text{R}_2$ ,  $\text{R}_3$  and  $\text{R}_4$  are the same or different and each represents an alkyl group of 3 to 30 carbon atoms, X represents S, S-S,  $\text{S}-(\text{CH}_2)_y\text{S}$ ,  $\text{S}-\text{CH}_2\text{CH}_2(\text{CH}_3)_2-\text{S}$  and y is an integer of 1 to 3.

8. (Previously amended) The method of claim 7 wherein the lubricating oil has a phosphorus content of up to 0.008 wt%.

9. (Original) The method of claim 8 wherein the base oil has a viscosity of about 5 to about 16 cSt at 100°C.

10. (Previously amended) The method of claim 9 wherein the lubricating oil includes one or more gas engine oil additives selected from the group consisting of ashless dispersants, ashless antiwear additives, metal passivators, pour point depressants, Viscosity Index improvers and antifoamants.